

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P400325WO	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 03/05019	International filing date (day/month/year) 18/11/2003	(Earliest) Priority Date (day/month/year) 23/11/2002
Applicant UNIVERSITY OF DURHAM		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/05019

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 F16L55/30 F16L55/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/18351 A (SIMPSON NEIL ANDREW ABERCROMBI ; WEATHERFORD LAMB (US)) 15 March 2001 (2001-03-15)	1-4,6,7, 11,12
Y	page 6, paragraph 3 - page 7, paragraph 1; figure 7	14-16
X	US 2002/108751 A1 (SIMPSON NEIL ANDREW ABERCROMBI) 15 August 2002 (2002-08-15) paragraph '0062! - paragraph '0084!; figures 3-9b	1-4,6,7, 9-11
X	US 4 770 105 A (SAKUMA YASUZI ET AL) 13 September 1988 (1988-09-13) column 4, line 3 - column 6, line 5; figures 4-12	1,2,5-7, 9,11
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

25 February 2004

Date of mailing of the international search report

02/03/2004

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/05019

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 0140, no. 73 (E-0887), 9 February 1990 (1990-02-09) & JP 1 291474 A (FANUC LTD), 24 November 1989 (1989-11-24) abstract	1
Y	----- WO 01/23213 A (STUTCHBURY NEIL WILLIAM ; UNIV DURHAM (GB); APPLETON ERNEST (GB)) 5 April 2001 (2001-04-05)	14-16
A	abstract -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/05019

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0118351	A	15-03-2001	CA 2384056 A1	15-03-2001
			EP 1210500 A1	05-06-2002
			WO 0118351 A1	15-03-2001
			NO 20020842 A	24-04-2002
US 2002108751	A1	15-08-2002	AU 3948897 A	06-03-1998
			GB 2350386 A ,B	29-11-2000
			WO 9806927 A1	19-02-1998
			GB 2334280 A ,B	18-08-1999
			NO 990712 A	12-04-1999
			US 2002079107 A1	27-06-2002
US 4770105	A	13-09-1988	JP 2075192 C	25-07-1996
			JP 7108659 B	22-11-1995
			JP 62034048 A	14-02-1987
			DE 3675462 D1	13-12-1990
			EP 0212456 A2	04-03-1987
JP 1291474	A	24-11-1989	NONE	
WO 0123213	A	05-04-2001	GB 2356439 A	23-05-2001
			AU 7533200 A	30-04-2001
			EP 1216379 A2	26-06-2002
			WO 0123213 A2	05-04-2001
			JP 2003510212 T	18-03-2003
			NO 20021020 A	23-05-2002